IN THE CLAIMS:

The claims have been amended as follows:

1.   (Previously Presented) A method for transmitting signaling system seven (SS7) user part messages between SS7 signaling points comprising:

    (a)   receiving, at a first signal transfer point (STP) configured to perform SS7 message transfer part layer 3 routing and global title translation, a first SS7 user part message sent from a first SS7 signaling point over an SS7 signaling link;

    (b)   at the first signal transfer point, encapsulating the first SS7 user part message in a first internet protocol (IP) packet; and

    (c)   from the first signal transfer point, transmitting the first IP packet to a node over an IP network.

2.   (Original) The method of claim 1 wherein encapsulating the first SS7 user part message in a first IP packet includes adding a transmission control protocol (TCP) header to the first SS7 user part message.

3.   (Original) The method of claim 1 wherein encapsulating the first SS7 user part message in a first IP packet includes adding a user datagram protocol (UDP) header to the first SS7 user part message.

4.   (Original) The method of claim 1 wherein encapsulating the first SS7 user part message in a first IP packet includes adding an application-level sequence number to the first SS7 user part message.

5.   (Previously Presented) The method of claim 1 wherein transmitting the first IP packet to a node includes transmitting the first IP packet without terminating user part layer communications.

6.   (Previously Presented) The method of claim 1 wherein transmitting the first IP packet to a node over an IP network comprises transmitting the IP packet to a local service switching point (SSP), and the IP network thereby functions as an SS7 A link between the first STP and the SSP.

7.   (Previously Presented) The method of claim 1 wherein transmitting the first IP packet to a node over an IP network comprises transmitting the IP packet to a second STP of the same hierarchical level as the first STP, and the IP network thereby replaces an SS7 B link between the first and second STPs.

8.   (Previously Presented) The method of claim 1 wherein transmitting the first IP packet to a node over an IP network comprises transmitting the IP packet to a second STP, the first and second STPs comprising a mated pair of STPs, and the IP network thereby functions as an SS7 C link between the first and second STPs.

9.   (Previously Presented) The method of claim 1 wherein transmitting the first IP packet to a node over an IP network comprises transmitting the IP packet to a second STP of a different hierarchical level than the first STP, and the IP network thereby functions as an SS7 D link between the first and second STPs.

10.   (Previously Presented) The method of claim 1 transmitting the first IP packet to a node over an IP network comprises transmitting the IP packet to a service switching point (SSP) located in a different local area from the first STP, and the

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IP network thereby functions as an SS7 E link between the first STP and the SSP.

11-47. (Canceled)

48. (Previously Presented) A signaling system seven/internet protocol (SS7/IP) user part message communicator comprising computer-executable instructions embodied in a computer-readable medium for performing steps comprising:

    (a) receiving, at a first signal transfer point (STP) configured to perform SS7 message transfer part layer 3 routing and global title translation, a first SS7 user part message sent from a first SS7 signaling point over an SS7 signaling link;

    (b) at the first signal transfer point, encapsulating the first SS7 user part message in a first IP packet; and

    (c) from the first signal transfer point, transmitting the first IP packet to a node over an IP network.

49. (Original) The SS7/IP user part message communicator of claim 48 wherein encapsulating the first SS7 user part message in a first IP packet includes adding a transmission control protocol (TCP) header to the first SS7 user part message.

50. (Original) The SS7/IP user part message communicator of claim 48 wherein encapsulating the first SS7 user part message in a first IP packet includes adding a user datagram protocol (UDP) header to the first SS7 user part message.

51. (Original) The SS7/IP user part message communicator of claim 48 wherein encapsulating the first SS7 user part message in a first IP packet includes adding an application-level sequence number to the first SS7 user part message.

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52.   (Original) The SS7/IP user part message communicator of claim 48 wherein transmitting the first IP packet to a second SS7 signaling point includes transmitting the first IP packet without terminating user part layer communications.

53.   (Previously Presented) The SS7/IP user part message communicator of claim 48 wherein transmitting the first IP packet to a node over an IP network comprises transmitting the IP packet to a service switching point (SSP), and the IP network thereby functions as an SS7 A link between the first STP and the SSP.

54.   (Previously Presented) The SS7/IP user part message communicator of claim 48 wherein transmitting the first IP packet to a node over an IP network comprises transmitting the IP packet to a second STP of the same hierarchical level as the first STP, and the IP network thereby replaces an SS7 B link between the first and second STPs.

55.   (Previously Presented) The SS7/IP user part message communicator of claim 48 wherein transmitting the first IP packet to a node over an IP network comprises transmitting the IP packet to a second STP, the first and second STPs comprising a mated pair of STPs, and the IP network thereby functions as an SS7 C link between the first and second STPs.

56.   (Previously Presented) The SS7/IP user part message communicator of claim 48 wherein transmitting the first IP packet to a node over an IP network comprises transmitting the IP packet to a second STP of a different hierarchical level than the first STP, and the IP network thereby functions as an SS7 D link between the first and second STPs.

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57.   (Previously Presented) The SS7/IP user part message communicator of claim 48 wherein transmitting the first IP packet to a node over an IP network comprises transmitting the IP packet to a service switching point (SSP) located in a different local area from the first STP, and the IP network thereby functions as an SS7 E link between the first STP and SSP.

58-78. (Canceled)

79.   (Previously Presented) The method of claim 1 wherein the first SS7 user part message comprises an ISDN user part message.

80.   (Previously Presented) The method of claim 1 wherein receiving a first SS7 user part message includes intercepting a first SS7 user part message addressed to an SS7 point code of the node, wherein encapsulating the first SS7 user part message in a first IP packet includes inserting a destination IP address corresponding to the node in the IP packet, and wherein the node comprises a destination end office for a call associated with the first SS7 user part message.

81.   (Previously Presented) The SS7/IP user part message communicator of claim 48 wherein the first SS7 user part message comprises an ISDN user part message.

82.   (Previously Presented) The SS7/IP user part message communicator of claim 48 wherein receiving a first SS7 user part message includes intercepting a first SS7 user part message addressed to an SS7 point code of the node, wherein encapsulating the first SS7 user part message in a first IP packet includes inserting a destination IP address corresponding to the node in the IP packet, and wherein the node comprises a destination end office for a call associated with the first SS7 user part message.

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83.   (Currently Amended) A method for transmitting signaling system seven (SS7) user part messages between SS7 signaling points comprising:

(a)   receiving, at a first signal transfer point (STP), a first SS7 user part message sent from a first SS7 signaling point over an SS7 signaling link, wherein receiving [[a]] the first SS7 user part message at the first STP includes receiving [[a]] the first SS7 user part message at an SS7 link interface module within the first STP, wherein the first STP includes a distributed internal processing architecture including at least one SS7 link interface module for sending and receiving SS7 signaling messages over SS7 signaling links, at least one data communications module for sending and receiving SS7 user part messages over IP signaling links and for extracting SS7 user part messages from inbound IP messages, and a bus for interconnecting the link interface module and the data communications module and wherein the link interface module and the data communications module each include an SS7 message MTP level 3 routing function for routing SS7 user part messages to a module in the first STP associated with outbound signaling links for the SS7 user part messages;

(b)   at the first signal transfer point, encapsulating the first SS7 user part message in a first internet protocol (IP) packet; and

(c)   from the first signal transfer point, transmitting the first IP packet to a node over an IP network.

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84.   (Previously Presented) The method of claim 83 comprising, at the link interface

module, determining that the first SS7 user part message should be routed to an

IP node and forwarding the first SS7 user part message to the data

communications module via the bus.

85.   (Previously Presented) The method of claim 84 wherein encapsulating the SS7

user part message in a first IP packet includes receiving the first SS7 user part

message at the data communications module and encapsulating the first SS7

user part message in an IP packet addressed to the node.

86.   (Currently Amended) A signaling system seven/internet protocol (SS7/IP) user

part message communicator comprising computer-executable instructions

embodied in a computer-readable medium for performing steps comprising:

(a)   receiving, at a first signal transfer point (STP), a first SS7 user part

message sent from a first SS7 signaling point over an SS7 signaling link,

wherein receiving [[a]] the first SS7 user part message at the first STP

includes receiving [[a]] the first SS7 user part message at an SS7 link

interface module within the first STP, wherein the first STP includes a

distributed internal processing architecture including at least one SS7 link

interface module for sending and receiving SS7 user part messages over

IP signaling links and for extracting SS7 user part messages from inbound

IP messages, at least one data communications module for

communicating signaling messages over IP signaling links, and a bus for

interconnecting the link interface module and the data communication

module and wherein the link interface module and the data

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communications module each include an SS7 MTP level 3 routing function for routing SS7 user part messages to a module in the first STP associated with outbound signaling links for the SS7 user part messages;

(b)   at the first signal transfer point, encapsulating the first SS7 user part message in a first IP packet; and

(c)   from the first signal transfer point, transmitting the first IP packet to a node over an IP network.

87.   (Previously Presented) The SS7/IP user part message communicator of claim 86 comprising, at the link interface module, determining that the first SS7 user part message should be routed to an IP node and forwarding the first SS7 user part message to the data communications module via the bus.

88.   (Previously Presented) The SS7/IP user part message communicator of claim 87 wherein encapsulating the SS7 user part message in a first IP packet includes receiving the first SS7 user part message at the data communications module and encapsulating the first SS7/IP user part message in an IP packet addressed to the node.

89.   (New) The method of claim 1 wherein the first SS7 user part message comprises an ISDN user part (ISUP) initial address message.

90.   (New) The method of claim 1 wherein encapsulating the first SS7 user part message in the first IP packet includes inserting a destination IP address in the first IP packet, the destination IP address corresponding to the node, and inserting a source IP address in the first IP packet, the source IP address corresponding to the signal transfer point.

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91.   (New) The method of claim 1 wherein encapsulating the first SS7 user part message in the first IP packet includes retaining SS7 routing information in the first SS7 user part message.

92.   (New) The SS7/IP user part message communicator of claim 1 wherein the first SS7 user part message comprises an ISDN user part (ISUP) initial address message.

93.   (New) The SS7/IP user part message communicator of claim 48 wherein encapsulating the first SS7 user part message in the first IP packet includes inserting a destination IP address in the first IP packet, the destination IP address corresponding to the node, and inserting a source IP address in the first IP packet, the source IP address corresponding to the signal transfer point.

94.   (New) The SS7/IP user part message communicator of claim 48 wherein encapsulating the first SS7 user part message in the first IP packet includes retaining SS7 routing information in the first SS7 user part message.

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